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Allie Barrett

Applicant: Maki et al.

Serial No.: 10/630,277

Filed: July 31, 2003

Title: **POLYURETHANE LAMINATES  
FOR PHOTOCHROMIC  
LENSES**

Examiner: Unknown

Group Art Unit: 1176

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Sir:

In accordance with 37 C.F.R. § 1.56, Applicant(s) submit herewith patents, publications, or other information of which they are aware that may be considered in connection with the above-referenced patent application. Submission of this Information Disclosure Statement is not intended to constitute an admission that any patent, publication or other information referred to herein is "material" to Applicants' invention as that term is currently defined in 37 C.F.R. § 1.56 (37 CFR § 1.97(h)).

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other relevant information exists.

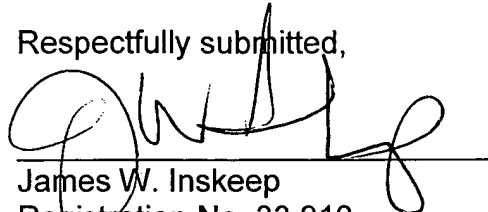
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A Patent and Trademark Office Form 1449 listing each of these informational items is enclosed along with a copy of each item.

This Information Disclosure Statement is being filed before the mailing date of the first Office Action issued on the merits of the subject application in accordance with 37 C.F.R. §1.97(b)(3). In the event that a first Office Action has been mailed to the undersigned prior to the mailing of this Information Disclosure Statement, the Commissioner is hereby authorized to charge payment of the applicable fee pursuant to 37 C.F.R. § 1.17(p) to Deposit Account No. 50-2809. A duplicate copy of this document is enclosed.

JAN 30, 2004  
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Respectfully submitted,

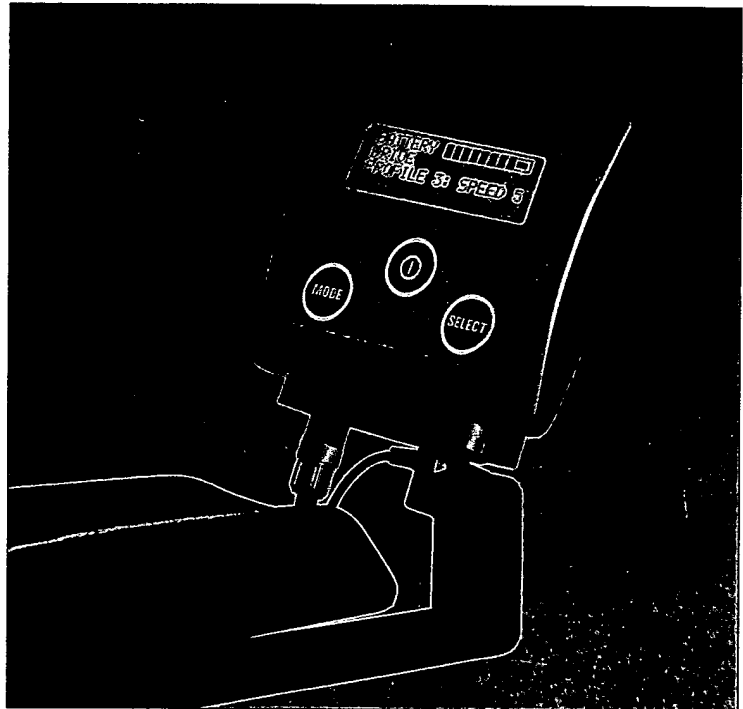
  
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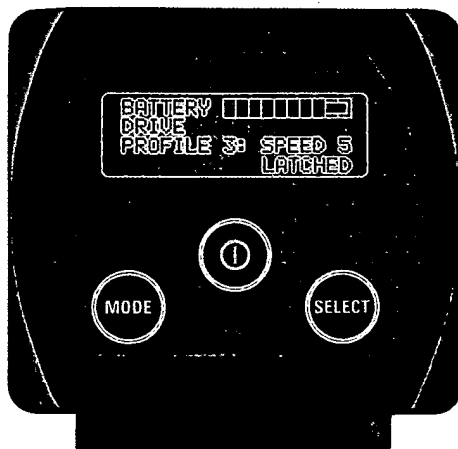
*Omni+*  
*ACM*  
*JSM - sw*  
*Chin*  
*Dual*



**SPECIALTY CONTROL MODULES FOR PILOT+**

***Penny+Giles***





*A single  
module for a  
range of  
specialty  
controls*

The Omni+ Module is an advanced interface for the Penny & Giles Pilot+ powerchair control system. This single, compact, stylish unit can connect to a wide variety of different specialist input devices, such as head controls and sip and puff. The device can then be used to control all driving, actuator and lighting functions of a powerchair, as well as supporting environmental controls. No longer are different interface modules needed for use with different types of input device, which simplifies and reduces the cost of wheelchairs fitted with special controls. The Omni+ Module acts as the "Joystick Module" in any Pilot+ system: all the normal Pilot+ battery charge, maximum speed, diagnostic and actuator information is indicated to the user by the Liquid Crystal Display (LCD). The LCD has been chosen for its excellent clarity and very wide viewing angle, which provides maximum flexibility in positioning the Omni+ Module on the wheelchair. The LCD technology also ensures full daylight visibility even in the very brightest sunlight. The versatility of LCDs means that many additional special functions – over and above the normal wheelchair functions – can be displayed, such as scanner control and sip and puff pressures. As well as providing all conventional wheelchair control functions, the Omni+ Module supports latched driving and actuator operation. This means users who are unable to operate input devices for a prolonged period can control the wheelchair with short commands which latch the wheelchair drive or actuator operation. Two forms of latched driving operation are supported – stepped and cruise. Stepped allows the wheelchair speed to be controlled to one of five levels, whereas cruise gives a steady acceleration until the input device command is removed, a constant speed is then assumed.

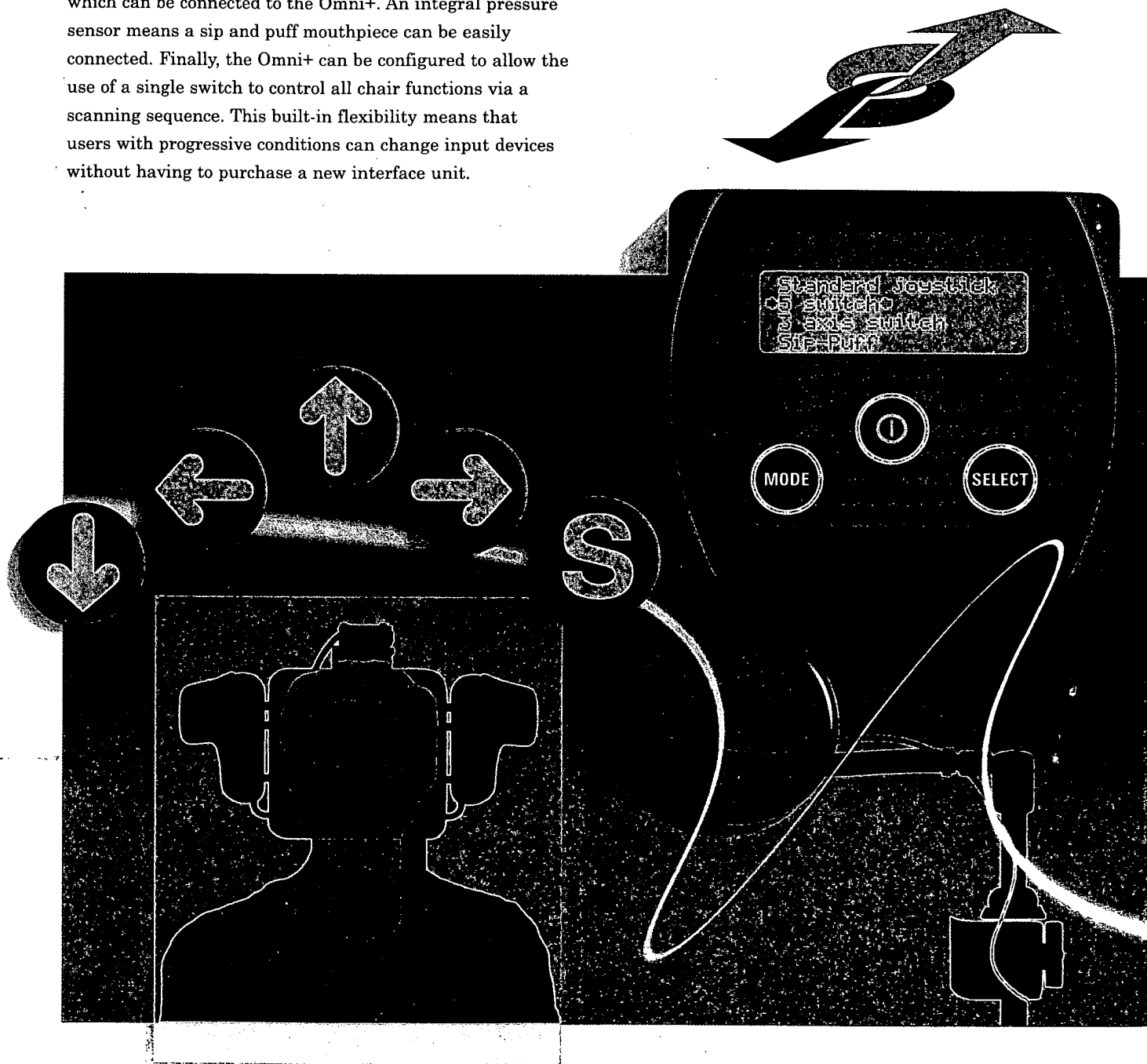
#### **ENVIRONMENTAL CONTROL**

By connecting an Auxiliary Control Module (ACM) to the Pilot+ system, the input device may then be used to operate environmental controls or interface to a PC mouse. The ACM can be simply connected into any Pilot+ system, no special connectors or adaptations are required. The outputs from the ACM are via two 9 pin D-type connectors wired to the TRACE configuration. Because the outputs are isolated relay contacts, the ACM is compatible with the majority of infra-red, ultrasonic and PC interface modules currently available.

## MULTIPLE INPUT DEVICES

Many different types of input device are supported by the Omni+ Module. A remote joystick used in conjunction with a single switch can offer an elegant chin solution which controls all chair functions. Four or five switch control systems configured as hand or foot controls can be connected, again covering all chair functions. Many head controls are based on three-axis switched or proportional systems, both of which can be connected to the Omni+. An integral pressure sensor means a sip and puff mouthpiece can be easily connected. Finally, the Omni+ can be configured to allow the use of a single switch to control all chair functions via a scanning sequence. This built-in flexibility means that users with progressive conditions can change input devices without having to purchase a new interface unit.

Penny & Giles can supply a remote joystick for use with the Omni+ Module, as well as a range of switches from well known manufacturers. For further information on the availability of input devices, please contact Penny & Giles' Sales Department.



## *Omni+ Module*

*One module compatible with many  
input devices*

- Remote Joystick*
- 4/5 Switch Control*
- 3 Axis Switch or Proportional  
(Head Control)*
- Sip and Puff*
- Single Switch Scanner*

*Stylish, integrated package*

*Clear, easy-to-read LCD screen*

*Direct connection to Pilot+ system*

*Controls all wheelchair functions*

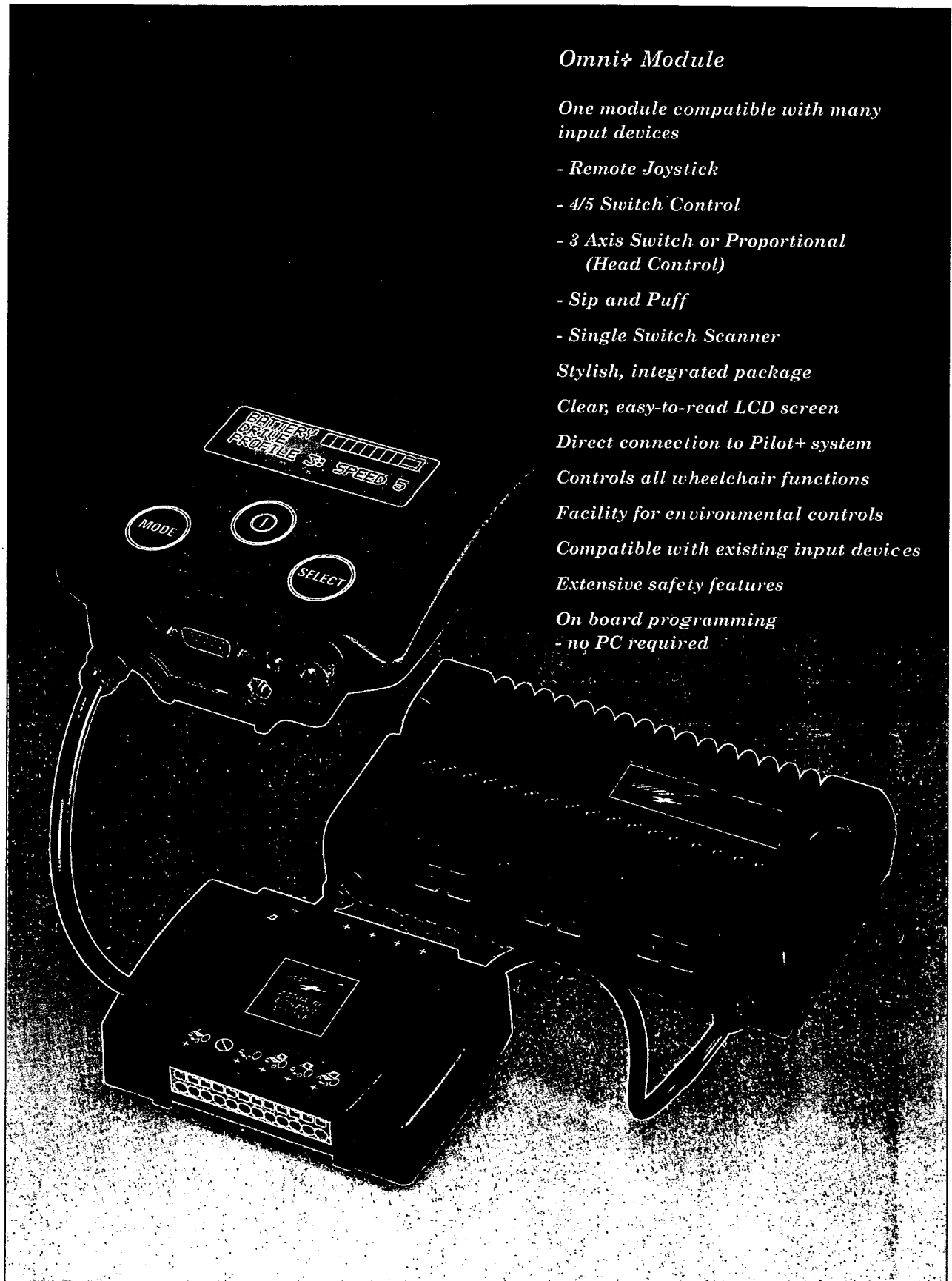
*Facility for environmental controls*

*Compatible with existing input devices*

*Extensive safety features*

*On board programming*

*- no PC required*

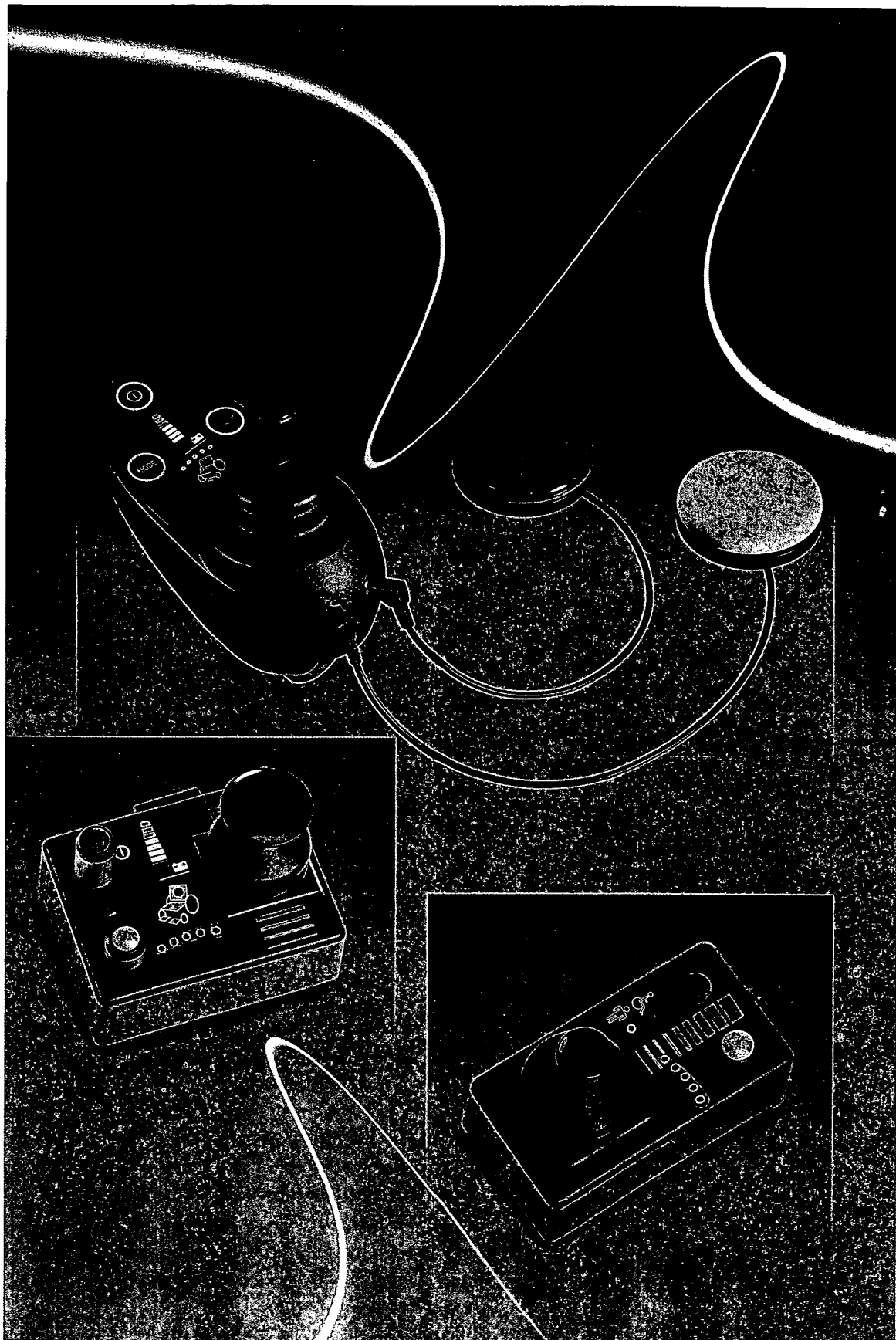




*JSM-sw*

*Chin*

*Dual*





*Simple  
installation  
and  
programming  
- easy change  
of input  
devices*

## ON-BOARD PROGRAMMING

Because of the universal nature of the Omni+ Module, there are many configuration options dependent on the type of input device or the user's individual requirements. All normal parameters such as speeds, acceleration and braking are programmed in the normal way for a Pilot+ system via a PP1 Programmer. However, the parameters which are special to the Omni+ Module are all accessed via the Mode and Select buttons on the front panel.

These buttons are used to select and make adjustments to a clear on-screen menu. There is no need for a PC or specialist software, meaning that adapting a chair is simple and cost-effective. To further ease the set-up process, all installation and programming is supported by comprehensive product literature.

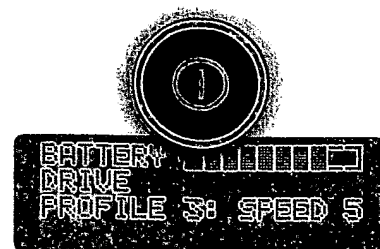
## SAFETY FIRST

As with all Penny & Giles' products, user safety was the utmost consideration during the Omni+ Module's specification and development. All module input circuits have been designed so that if the input device becomes disconnected the situation can be detected and a safe condition will result.

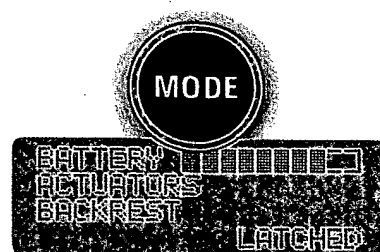
For example, if the switch used for emergency stopping becomes accidentally disconnected the Omni+ Module will automatically stop, thus preventing the system being used with a non-functional emergency stop device.

While the Omni+ Module is being operated in latched mode, a time-out function is included which means the input device has to be operated at regular intervals to continue driving or moving an actuator.

Additional to these specialty safety features, the Omni+ Module has been designed to meet ISO7176/14 and EN12184. Documentation packages are also available to support powerchair submissions to any of the regulatory bodies in the USA or for CE marking in Europe. EMC, as always, has been a factor in the design of the module and as a result of Penny & Giles' own EMC laboratory an extremely robust product has evolved.



*The On/Off button applies power to the Omni+ Module and enters wheelchair driving mode. There is also facility for a remote operated On/Off switch.*



*The Mode button selects different wheelchair operating modes, such as actuator control, lighting control or environmental control.*

*There is also facility for a remote operated Mode switch.*



*The Select button is used to enter the Omni+ Module on-board programming menu.*

*Wheelchair specialty control functions can then be set to the requirements of individuals.*

## JOYSTICK MODULE WITH SWITCHES

For users who cannot operate the On/Off and Mode switches on a standard Pilot+ Joystick Module, but for whom a full Omni+ system is not required, an intermediate solution using a standard Joystick Module with provision for large external switches may be appropriate. A standard Pilot+ Joystick Module is fitted with two 3.5mm/1/8" jack sockets into which larger external switches can be connected and then located in any position on the wheelchair.

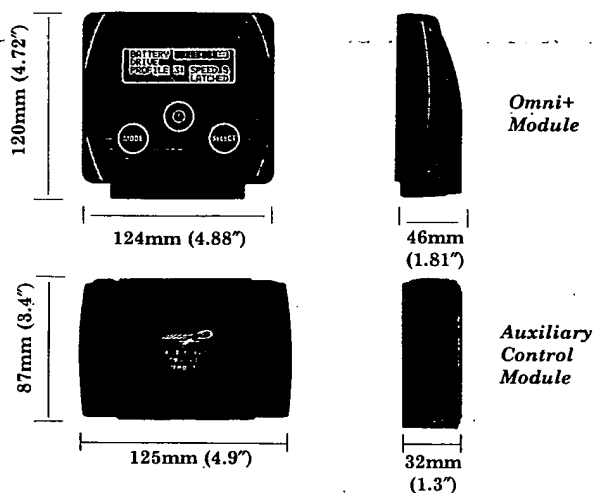
## CHIN MODULE

The Pilot+ Chin Module allows control of all wheelchair drive and actuator functions. The module is extremely versatile offering independently height adjustable on/off and mode switches, variable joystick forward direction and a selection of specially designed chin cups and balls. TruCharge display, speed display, actuator display, programming, charging and locking are also included. This module can also be used in Attendant Only and Tray applications.

## DUAL ATTENDANT MODULE

The Dual Attendant Module allows the powerchair to be controlled either by the user or from the rear by an attendant. Control is easily exchanged via a push-button and the attendant can also alter the maximum speed of the chair to a comfortable walking pace. The mode of operation and speed setting are clearly indicated to the attendant with a selection of LEDs.

## DIMENSIONS



## PRODUCTS

### Omni+ Module

Backlit LCD screen  
TRACE standard inputs  
Analog inputs  
Joystick  
3 axis proportional  
Digital Inputs  
4/5 switch  
3 axis switch  
Single switch scanner  
Mode/Stop switch input  
On/off switch input  
Sip/puff pneumatic port  
Charger/Programming/Security key socket  
On-board programming

### Input Devices

Remote Joystick:  
Joystick and red Tash Buddy button.  
Further information  
available from Penny & Giles

### Pilot+ Auxiliary Control Module (ACM)

2 x 4 relay channels  
TRACE standard outputs

### Joystick Module with Switches (JSM-sw)

Pilot+ JSM, see Pilot+ brochure.  
3.5mm/1/8" jack sockets  
for On/Off and Mode  
Green Tash Buddy Button  
Yellow Tash Buddy Button  
Dimensions 158mm x 151mm x 77mm  
6.2" x 5.9" x 3.0"

### Pilot+ Chin Module

Independent switch height adjustment  
Variable joystick orientation  
On/off switch  
Mode switch  
TruCharge  
Charging/Programming socket  
Security lock  
Actuator display  
Dimensions 124mm x 118mm x 98mm  
4.9" x 4.6" x 3.9"

### Pilot+ Dual

Connections to JSM and Power Module  
User/Attendant push-buttons and LEDs  
Speed control pushbutton and LEDs  
Dimensions 125mm x 119mm x 64mm  
4.9" x 4.7" x 2.5"

## SPECIFICATIONS

Supply Voltage:	24VDC nominal
Reverse Battery Protection:	40VDC
Operating Temperature:	-25°C to +50°C
Storage Temperature:	-40°C to +65°C
Moisture Resistance:	IP54
Safety:	Multiple hardware & software strategy Designed to ISO7176/14. Documentation for approvals applications.
ACM Outputs	0.5A @ 24VDC

BS EN ISO 9001: 1994



Certificate No FM 21061

**Penny & Giles Drives Technology**  
**Division of Autronics Corporation**

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***Penny+Giles***

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